

REMARKS

1. Claims 1-25 are pending in the application. Claims 1-25 are rejected under 35 U.S.C. § 103(a). The specification and drawings have been amended to overcome the objections by the Examiner. Applicants thank the Examiner for her courtesy in pointing out the errors which are now corrected. The Examiner is respectfully requested to withdraw the objections to the specification and drawings.

2. Claims 12, 15-17, and 20-21 are rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Pat. No. 5,533,845 to John Glover ("Glover"). The rejection states that "Glover teaches a portable milling machine, the spindle of which is considered a 'router' having a milling bit 61 [which] is ultimately attached to a frame 12 considered the claimed 'platform', which frame 12 is moved in the generally left/right direction shown in the top portion of Figure 1 along a 'guide' track, located within subframe 30 [which] is affixed to the workpiece 10 via fasteners 'drilled' therethrough." Office Action, p. 3, lines 3-6.

The rejection states that while Glover teaches fasteners that penetrate into the workpiece, Glover is silent concerning whether fasteners are drilled "through" the workpiece. The rejection also states that it does not appear that to matter to the function of Glover's device whether or not fasteners extend all the way "through" the workpiece, so long as the fasteners perform the attaching function. The rejection further states that whether or not the fasteners extend all the way through the "workpiece" in the present invention does not seem to matter, so long as the fasteners perform the attaching function. The rejection further states that whether or not the fasteners extend all the way "through" the workpiece in the present invention appears to be a function of design, i.e., thick versus thin workpieces.

Applicants traverse the rejection. Glover is directed to a portable "Milling Machine," not a router. As is well-known in the machining arts, a milling machine is fixed in place while cutting, but is able to move the cutting tool in at least two axes, as shown in Glover, Fig. 6, with control handles 18 and 19. A router is typically moved in order to make a cut, or the workpiece must be moved past the cutting tool of the router. Further, a router has only a single degree of freedom, a vertical or height adjustment. Applicants have defined router in the specification as

routers with standard configurations and commercially available. See specification, p. 8, line 31, to p. 9, line 4. Catalogues for Craftsman® routers from Sears are easily available showing what is meant by a “router,” and Applicants furnished, in the Information Disclosure Statement filed on July 27, 2001, a copy of the router catalogue from Sioux Tools, Inc., also depicting a router. Glover discloses a “Milling Machine,” not the router claimed in Claim 12 and dependent claims. Glover also does not describe or suggest a router for use with sheet metal, as claimed. The limitation of “a sheet metal router apparatus” is not disclosed or suggested in Glover.

In addition, Glover does not describe or suggest the claim limitation of “a guide, fastened to the sheet metal by fasteners drilled through the sheet metal.” This claim element requires a physical guide, and includes functional limitations of a guide fastened by fasteners drilled **through** the sheet metal to which the guide, the platform, and the router are mounted (emphasis added). The rejection states that “through” means “extending from one surface to another.” Office Action, January 27, 2004, p. 4, lines 17-20, citing Merriam-Webster’s Collegiate Dictionary, 10th ed. at 1230.

It makes no difference whether Glover’s device would work with fasteners drilled **through** the workpiece, it only matters for obviousness what Glover teaches, discloses or suggests. *In re Novak*, 16 U.S.P.Q. 2043, 2044 (Fed. Cir. 1990) (unpublished opinion, stating that obviousness must be determined in light of what is taught or suggested by the prior art). Even if one were to construe the workpiece of Glover as sheet metal, Figs. 1, 4, and 16 clearly show that Glover’s platform 30 is mounted to the workpiece via corresponding attachment sites 33, very thick bosses, such that fasteners through holes 32 and bosses 33 are not drilled through workpiece 10. Glover does not teach that the fasteners penetrate **through** the holes and bosses, and thus **through** a “sheet metal” workpiece from one surface to the opposite surface, as required by Claim 12. Furthermore, citing Glover in this manner is impermissible hindsight, combining the present invention with a reference in order to find the claimed application obvious. *In re Deuel*, 34 U.S.P.Q.2d 1210 (Fed. Cir. 1995) (reversing rejections for obviousness because of the use of impermissible hindsight).

In a similar manner, it is of no consequence that the present invention would function with fasteners that merely penetrate the sheet metal claimed in Claim 12 and its dependent claims. Embodiments of the Applicants’ invention, as claimed in Claim 12 and its dependent

claims, involve sheet metal, not a general "workpiece." As a practical matter, sheet metal is usually thin, rather than thick, and there are likely few designs that would be practical for fasteners that merely penetrate the sheet metal, rather than having a guide "fastened to the sheet metal by fasteners drilled through the sheet metal." Nevertheless, Applicants have claimed an invention, for any design covered by the claims, in which a guide is "fastened to the sheet metal by fasteners drilled through the sheet metal," not by fasteners that penetrate the sheet metal.

Glover does not describe or suggest all the limitations of Claim 12 and dependent Claims 15-17 and 20-21, and is therefore not obvious over Glover. Therefore, the rejection does not make out a prima facie case of obviousness. M.P.E.P. 2143. The Examiner is therefore requested to withdraw the rejection under 35 U.S.C. § 103(a) of Claims 12, 15-17, and 20-21 in view of Glover.

3. The Office Action rejects Claims 12, 17 and 20 under 35 U.S.C. § 103(a) as being obvious over U.S. Pat. No. 5,106,243 to Christopher Hunt ("Hunt"). The rejection states that Hunt teaches a portable milling machine, the spindle of which is considered a "router." The rejection notes that the spindle unit is affixed to a movable ram or "platform 26" that moves along a dovetail slide 18 of a bed 12, citing Fig. 1 and col. 2, lines 26-65. The rejection states that the device has a vertical adjustment for adjusting the depth of cut of the milling cutter 68, and also that the bed plate 10 of the guiding device is bolted to a workpiece surface, citing col. 4, lines 18-22. As to Claim 20, the rejection states that carriage block 24, as seen in Fig. 1, serves as a "bearing" as claimed. The rejections admit that Hunt does not describe or suggest fasteners drilled through the sheet metal. Office Action, January 27, 2004, p. 6, lines 17-18. The rejection also states that Hunt's device will work just as well if fasteners are drilled **through** Hunt's workpiece (emphasis added), and that embodiments of the present invention will work just as well whether the fasteners are drilled **through** the sheet metal (emphasis added), or merely penetrate the "workpiece." Finally, the rejection states that it appears to be a matter of design, the thickness of the "workpiece," as to whether the fasteners are drilled through the sheet metal or merely penetrate.

Applicants traverse the rejections. As discussed above with respect to the rejections under Glover, Hunt also fails to disclose either a router or sheet metal. Therefore, Hunt does not

disclose or suggest the claim limitation of "a sheet metal router apparatus," nor does Hunt disclose or describe "a router having a vertical adjustment." Finally, Hunt does not disclose the claim limitation of "a guide, fastened to the sheet metal by fasteners drilled through the sheet metal." The portion cited in the rejection for this limitation concerns Fig. 6, which recites "the bed plate 10 is adapted for mounting on a particular work surface from which machining is to be accomplished and for this purpose the bed plate is tack welded or bolted to such surface," i.e. press platen 100 in Fig. 6. See also Fig. 3, which depicts fasteners holding base plate 10 to machined surface 109, but does not depict fasteners drilled through machined surface 109. The machining surfaces of Hunt are very thick workpieces, described as plates or platens, not sheet metal. Hunt does not describe or suggest sheet metal nor does Hunt teach fasteners drilled through the "sheet metal."

It makes no difference whether Hunt's device would work as well with fasteners according to the present invention, because Hunt does not describe or suggest "a guide, fastened to the sheet metal by fasteners drilled through the sheet metal." By the same arguments made above, it also does not matter that the present invention might work with fasteners that merely penetrate the sheet metal, rather than fasteners drilled through the sheet metal, depending on workpiece thickness. Applicants have claimed a router apparatus with "a guide, fastened to the sheet metal by fasteners drilled through the sheet metal." Hunt does not describe or suggest all the limitations of Claim 12 and dependent Claims 17 and 20. Therefore, the rejection does not make out a prima facie case of obviousness against Claims 12, 17 and 20. M.P.E.P. 2143. The Examiner is therefore respectfully requested to withdraw the rejection under 35 U.S.C. § 103(a) of Claims 12, 17 and 20 in view of Hunt.

4. The Office Action also rejected Claims 13 and 19 under 35 U.S.C. § 103(a) as being unpatentable over either Hunt or Glover as applied to Claim 12. Claims 18, and alternatively, Claim 17, is/are also rejected under the same rationale and references, and further in view of U.S. Pat. No. 3,133,339 to Thomas Ribich ("Ribich"). Claims 13 and 17-19 are patentable because Claim 12 is patentable. Claims depending from allowable claims are themselves allowable.

In addition, Claim 19 does not merely claim a guide made from a plastic material, the material is claimed as being formed to a uniform height and width. The rejection and the

references make no mention of these limitations. Therefore, the rejection of Claims 13 and 17-19 under 35 U.S.C. § 103(a) is improper. The Examiner is respectfully requested to withdraw the rejections over Hunt, Glover and Ribich.

5. Claims 1-5, 7-11, 14, and 22-25 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pat. No. 5,533,845 to John Glover ("Glover"), as discussed for Claims 12-13 and 15-21 above, and further in view of either U.S. Pat. No. 5,503,203 to Ase Stornetta ("Stornetta") or U.S. Pat. No. 3,837,383 to Kenneth Ko ("Ko"). The rejection states that Glover teaches the aspects of the invention discussed above, and also teaches "grips," i.e., the alignment wheels 18 and 19 in Fig. 6, which each have a gripping handle protruding therefrom. Glover does not teach a vacuum fitting for removing machined debris, while Stornetta and Ko both teach such a fitting. Therefore, states the rejection, it would have been obvious to one having ordinary skill in the art to use the attachment of Stornetta and Ko with the device or Glover, to reduce the hazard to the operator. The rejection also repeats the arguments listed above for Glover and Hunt concerning the use of an aircraft skin lap router using a guide with fasteners drilled through the skin as opposed to fasteners that merely penetrate the skin.

Applicants traverse the rejections. As noted above, Glover does not describe or suggest several limitations of the apparatus described in the present application. As applied to independent Claim 1, Glover does not disclose aircraft skin, nor does Glover describe or suggest the claimed limitations of "a router" or "a guide, fastened to the skin by fasteners drilled through the skin." Furthermore, Glover does not describe or suggest the functional limitation "wherein an operator adjusts the router vertical adjustment for a desired depth of cut on the aircraft skin lap [and] the router cuts the skin lap." The rejection cites no portion of Glover for these limitations, nor does the rejection cite any passage in Stornetta or Ko for these limitations.

By the same arguments listed above for the rejections of Claim 12, the arguments in the rejection concerning the desirability of using fasteners that penetrate the skin rather than being drilled through the skin are moot, and may constitute impermissible hindsight. The references must describe or suggest all the limitations of the invention claimed in the present application. Applicants for a patent need not show that the references would have profited from the present invention or do not need the present invention, nor need Applicants demonstrate that the claimed

invention would work in a way suggested by the reference. Only Glover is cited in this portion of the rejection for the router and the fasteners, and Glover does not describe or suggest a router or fasteners drilled through the skin. Glover also fails to cite other limitations of Claims 1, 22, and 23, and dependent claims.

As applied to dependent Claim 14, the discussion above in paragraph 2, with respect to Glover and Claim 12, establishes that Glover does not disclose Claim 12 limitations of at least "a guide, fastened to the sheet metal by fasteners drilled through the sheet metal," and "a router." The addition of Stornetta or Ko above for a vacuum fitting does not cure the shortcomings of Glover in describing the inventions claimed in Claims 12 and 14. The Examiner is respectfully requested to withdraw the rejection under 35 U.S.C. § 103(a) of Claim 14.

Accordingly, the combined references do not describe or suggest all the limitations of Claim 1 and dependent Claims 2-5, 7-11, and 14. The Examiner is therefore respectfully requested to withdraw the rejection under 35 U.S.C. § 103(a) of Claims 1-5, 7-11 and 14.

As applied to independent Claims 22 and 24, Glover (and Stornetta and Ko) does not describe or suggest a router apparatus for aircraft skin, or a sheet metal router apparatus. As applied to Claim 22, Glover does not describe or suggest "a nylon guide, fastened to the skin by fasteners drilled through the skin," nor "a platform, mounted on the guide, the platform interfacing with the guide through at least one bearing." As applied to independent Claim 24, Glover does not describe or suggest "a nylon guide, fastened to the sheetmetal by fasteners drilled through the sheetmetal," nor does Glover describe or suggest "a platform mounted on the guide, the platform interfacing with the guide through at least one bearing."

Since Glover, Stornetta, and Ko do not describe or suggest fasteners drilled through the skin of an aircraft to hold a router guide, the rejection has not made out a prima facie case of obviousness. M.P.E.P. 2143. Claims 22 and 24 are therefore allowable, as are their dependent claims, Claims 23 and 25. The Examiner is therefore respectfully requested to withdraw the rejection under 35 U.S.C. § 103(a) of Claims 22-25.

6. Claim 6, and alternatively Claim 5, are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pat. No. 5,533,845 to John Glover ("Glover"), and further in view of either U.S. Pat. No. 5,503,203 to Ase Stornetta ("Stornetta") or U.S. Pat. No. 3,837,383 to

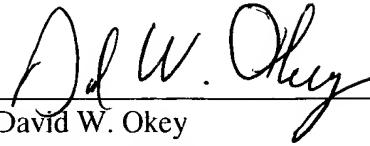
Kenneth Ko ("Ko"), and further in view of U.S. Pat. No. 3,133,339 to Thomas Ribich ("Ribich"). The rejection states that Glover, in view of either Stornetta or Ko teaches all aspects of the claimed invention as described in previous rejection paragraphs, but that Glover is silent as to the specifics of the cutting tool, teaching only a conventional cutting or milling bit, and not teaching the diameter or the number of flutes of the cutting tool. Ribich, states the rejection, teaches an end mill having three flutes and a quarter-inch diameter, and also teaches a particular end mill that gives a longer life than other end mills having differently configured cutting edges.

Applicants do not claim to have invented end mills. Applicants do not claim that the end mills in Claims 5 and 6 have longer life, and Applicants have not claimed whether the router and end mill combination produces continuous or discontinuous chips. Applicants have stated, but do not claim, improved heat-transfer performance from the particular combination. See specification, p. 9, lines 13-16. Applicants simply claim the combinations of Claims 5 and 6. By the arguments given above for Glover in paragraphs 2 and 5, Glover does not disclose fasteners drilled through aircraft skin or sheet metal, and also does not disclose other claim elements, such as a router (note that Glover is entitled "Milling Machine"). The rejection makes no pretence that Stornetta, Ko or Ribich disclose fasteners drilled through the skin. Claims 5 and 6 are allowable because they depend from allowable Claim 1. The Examiner is respectfully requested to withdraw the rejection of Claims 5 and 6.

7. Applicants have amended the specification and drawings as requested by the Examiner. Applicants request that the Examiner withdraw the objections to the specification and drawings, and withdraw rejections of Claims 1-25 under 35 U.S.C. § 103(a). Applicants believe that the Claims are in form for allowance, and respectfully request the Examiner to advance the claims to allowance. The Examiner is respectfully requested to call the undersigned if such will be of assistance to the Examiner or will help expedite the allowance of the claims.

Response to Office Action Mailed Jan. 29, 2004

Respectfully submitted,

A handwritten signature in cursive script, reading "David W. Okey", written over a horizontal line.

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APPENDIX A

FIG. 5

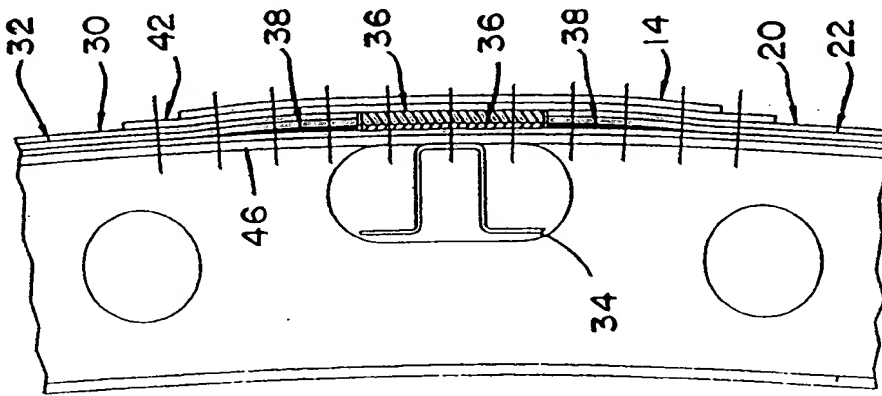


FIG. 6

